HES Cabling Systems

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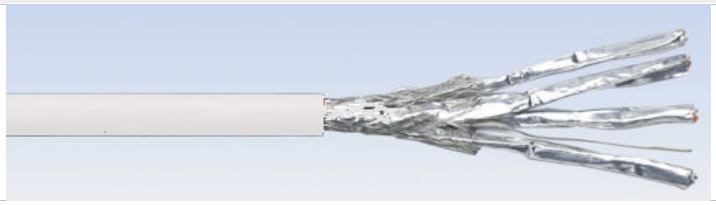
Technical Specification
Cable Type: 4x2x23# S/FTP Category 7A 100 Ohm LS0H-3 Indoor Horizontal Cable
HCS P/N: H7A-C040K-xxx-BA55W0
Revision: 03/20 Date: 17 June 2020



Category 7A S/FTP indoor cable, conforming to IEC 61156-5-2009, tested up to 1500MHz. The cable contains 4 individually foil-shielded twisted pairs cabled together, overall shielded with a tinned-copper braid overall jacketed with LS0H compound for indoor use, conforming to IEC 60332-3-24. This cable fully supports IEEE 802.3an 10GBASE-T and fully supports all IEEE 802.3 PoE applications including Type 1, 2, 3 & 4, CISCO UPoE & UPoE+ and HDBase-T PoH. The cable conforms to EU Regulation 305/2011 (CPR) Class B2ca-s1a,d0,a1.

Physical Description	
Basic Conductor	Solid 23AWG, bare annealed copper (UL444).
Insulation	SFS-PO.
Total number of insulated conductors	8, twisted in 4 pairs.
Color code	Blue x White, Orange x White, Green x White, Brown x White.
Individual pair shield	Aluminum foil, providing 100% coverage, foil face out.
Overall shield	Tin-coated copper wire braid, providing 55% nom. coverage.
Drain wire	Tin coated copper wire laid in parallel under the braid.
Outer jacket	Low-smoke, Zero-halogen, Flame-retardant compound for indoor use.
Outer jacket thickness	0.75 mm nom.
Optional Colors	
P/N H7A-C040K-xx0-BA55W0	Gray RAL 7035
P/N H7A-C040K-xx1-BA55W0	Blue RAL 5015
P/N H7A-C040K-xx2-BA55W0	Orange RAL 2003
P/N H7A-C040K-xx3-BA55W0	Green RAL 6024
P/N H7A-C040K-xx5-BA55W0	White RAL 9003
P/N H7A-C040K-xx6-BA55W0	Red RAL 3000
P/N H7A-C040K-xx8-BA55W0	Yellow RAL 1021
P/N H7A-C040K-xx9-BA55W0	Purple RAL 4005
Overall Diameter	7.6 mm nom.
Surface Marking	HCS H7A-C040K 4x2x23# S/FTP CATEGORY 7A DataLink 1000 SHIELDED LS0H CABLE ETL VERIFIED GHMT VERIFIED to CAT 7A ISO/IEC-11801 & IEC 61156-5 FR IEC 60332-3-24 CE CPR Class B2ca-s1a,d0,a1 CE 2011/65/EU (RoHS-2) [Meter Mark] METER [Batch Number]

Mechanical Properties	
Bend Radius	Dynamic: 8xD mm min. Static: 4xD mm min
Storage Temperature	-20 to +75C
Temperature installation range	0 to +50C
Temperature operating range	-20 to +60C
Flame Tests	IEC 60332-3-24 (flame propagation), IEC 60754 (acid gas) & IEC 61034 (smoke density).
EU Regulation 305/2011 (CPR) conformance	CENELEC EN 13501 Class B2ca-s1a,d0,a1. NB 0099.
Pulling force	150 N max.
Total Weight	60 kg/km nom.

Electrical Properties @ 20C	
Characteristic Impedance	100±5 Ohm @ 1-1500 MHz
Vp	75-77% nom.
Capacitance	40 pF/m nom @ 1 kHz
Capacitance unbalance to ground	1.6 pF/m max. @ 1 kHz
Insulation Resistance	0.5 GOhm•Km min.
DC Resistance	77 Ohm/km max. (2% max. resistance unbalance).
DC Loop Resistance	154 Ohm/km max. (2% max. resistance unbalance).
Voltage rating	72Vdc max.
Coupling attenuation	IEC 61156-5 TYPE I
Transfer Impedance	IEC 61156-5 Grade 1
Phase delay	$534+36/f^{1/2}$ nS/100m max. @ f=1-1500 MHz.
Delay Skew	15 nS/100m max. @ 4-1500MHz

Transmission Properties @ 20C CAT 7AIEC 61156-5-2009 Extended to 1500MHz

Freq. MHz	IL dB/100m Max	NEXT dB Min.	PS-NEXT dB Min.	ELFEXT dB/100m Min.	PS-ELFEXT dB/100m Min.	RL dB Min.	TCL dB Min.	EL-TCTL dB Min.	PS-ANEXT dB Min.	PS-AACR-F dB Min.
1	2.1	78.0	75.0	78.0	75.0	20.0	40.0	35.0	67.0	67.0
10	5.8	78.0	75.0	75.3	72.3	25.0	40.0	15.0	67.0	67.0
20	8.2	78.0	75.0	69.3	66.3	25.0	37.0	9.0	67.0	67.0
25	9.2	78.0	75.0	67.3	64.3	24.3	36.0	7.0	67.0	65.2
30	10.1	78.0	75.0	65.8	62.8	23.8	35.2	5.5	67.0	63.7
62.5	14.6	78.0	75.0	59.4	56.4	21.5	32.0	NS	67.0	57.3
100	18.5	75.4	72.4	55.3	52.3	20.1	30.0	NS	67.0	53.2
200	26.5	70.9	67.9	49.3	46.3	18.0	27.0	NS	67.0	47.2
250	29.7	69.4	66.4	47.3	44.3	17.3	26.0	NS	67.0	45.2
300	32.7	68.2	65.2	45.8	42.8	17.3	NS	NS	67.0	43.7
400	38.0	66.4	63.4	43.3	40.3	17.3	NS	NS	67.0	41.2
500	42.8	64.9	61.9	41.3	38.3	17.3	NS	NS	67.0	39.2
600	47.1	63.7	60.7	39.7	36.7	17.3	NS	NS	65.8	37.6
800	54.9	61.9	58.9	37.2	34.2	16.1	NS	NS	64.0	35.1
1000	61.9	60.4	57.4	35.3	32.3	15.1	NS	NS	62.5	33.2
1200	68.4	59.2	56.2	33.7	30.7	14.3	NS	NS	61.3	31.6
1400	74.4	58.2	55.2	32.2	29.2	13.6	NS	NS	60.3	30.3
1500	77.2	57.8	54.8	31.6	28.6	13.3	NS	NS	59.9	29.7

Transmission parameters indicated above 1000MHz are nominal non-binding values provided for reference only.

This cable fully conforms to EU Directive 2011/65/EU (RoHS-2)